Test cases Unit 3

Exercise 3

$$f(x) = 5 + 2x + 3x^2$$

- **Case 1**: I=[-2, 2]; K=0

- **Case 2**: I=[-2,2]; K=-6

- **Case 3**: I=[1,2]; k=2

Epsilon=0,01 for all the cases

Exercise 4

First case.

10 corks and bottles. Initial sizes:

C=[3, 5, 1, 7, 2, 10, 9, 4, 8, 6]

B=[6, 4, 3, 1, 9, 8, 10, 7, 5, 2]

Second case.

20 corks and bottles. Initial sizes:

C=[12, 1, 3, 10, 11, 2, 7, 15, 18, 5, 9, 20, 19, 4, 14, 13, 17, 16, 6, 8]

B=[7, 13, 2, 19, 10, 4, 9, 20, 1, 5, 15, 17, 6, 18, 3, 14, 16, 8, 12, 11]

Exercise 6

Height function:

$$h(x) = -0.1x^4 + 10x^2 + x$$

Bridge interval from x=0 to x=10 meters. Epsilon 1 centimeter

Exercise 7

- **First case:** 5 streets

0 1 1 0 1

1 0 0 1 0

0 1 1 1 1

1 0 0 1 1

1 1 0 0 0

- **Second case:** 10 streets

0 0 0 1 1 0 1 0 1 0

1 1 0 0 0 1 0 1 1 1

0 0 1 0 1 1 1 0 0 1

0 1 1 0 0 0 1 0 0 1

1 1 0 1 0 1 0 0 1 0

0 0 1 0 1 1 1 0 1 0

1 0 0 1 1 1 1 0 0 0

0 1 0 1 0 0 0 1 0 0

1 1 1 0 1 0 0 1 1 0

0 0 1 1 0 0 1 0 0 1